

Johnson Controls, Inc.
Visual Information Technical Contract Project
Cape Canaveral Air Station
Post Office Box 1029
Cape Canaveral, FL 32920-1029

JOHNSON
CONTROLS

22 October 2002

NASA
Mr. Charles T. Brown, TA-B2-C
Communications Division
Kennedy Space Center, FL 32899

SUBJECT: CONTRACT NUMBER FO8650-98-D-0018; CLIN 0006 (CDRL POST OPERATION CRITIQUE)

In response to CDRL requirements, Operation L4251, landing on 18 October 2002, Shuttle Atlantis, STS 112 Post Operation Critique. Please see the T+2 working day report attached. The report consists of the Console Log, the Post Operation Critique Report, and the Discrepancy/Malfunction Summary.

If further coordination is required, please contact this office at 853-2108.



William Bender
Operations Manager

WB/jt

Cc: Chas Abell

JOHNSON CONTROLS

VISUAL INFORMATION TECHNICAL CONTRACT
(VITC)
SHUTTLE CONSOLE OPERATION
SUPPORT LOG -- JPHO

Operation Number	Date
Activity <i>6/6 ECCS</i>	

Time	Action/Comments
<i>10/16/02</i>	<i>TCDT for STS 113 and LOM for STS 112 will be @ same day time.</i>
<i>0900</i>	<i>Rough Set - SLF using new POC ID num - wire starts (No RF used).</i>
	<i>POC ID 432 - could not be used to start camera. Good indication on console, but no start received. Working issue w/PSR Timing. No end</i>
	<i>POC ID 438 - S. End - also bypassed and not used.</i>
<i>10/16/02</i>	<i>Rec G/L ECCS for TCDT - CTS @ 0730 on 10/17/02.</i>
<i>10/17/02</i>	<i>0700 all items remain green. Both RW & PAD A for TCDT</i>
<i>0945</i>	<i>POCS ID 430 Comm link A is not there ADA on & off Both links good New A link is set</i>

(B)
 V. J.
 10/13
 10/17
 10/17
 10/17

Post Operation Critique Report
CDRL A004

Operation: L4251 STS-112 EOM
18 October, 2002
Orbiter: Atlantis

1. MILESTONE SUPPORT EVENTS:

- a. Planning Document completed: 12 Sept 2002
- b. Rough set of equipment: 14 Oct 2002
- c. Final equipment checkout: 18 Oct 2002
- d. Landing: 18 Oct 2002; 1144 L
- e. Film retrieval: 18 Oct 2002
- f. Product delivery: 22 Oct 2002; FedEx
- g. Equipment recovery: 21 Oct 2002

2. CAMERA COVERAGE

<u>CATEGORY:</u>	<u>MOPIC</u>	<u>STILL</u>	<u>VIDEO</u>	<u>TOTAL</u>
a. Documentary	0	07	3	10
b. Engineering	12	18	9	39
c. Digital	0	4	0	4
TOTAL	12	29	12	53

3. CONDUCT OF OPERATION

a. Overview:

- The launch of STS-112 occurred on 07 October 2002; 1545 Local, or 07 October 2002; 2045Z.

<u>Category</u>	<u>Committed Items</u>	<u>Successful Items</u>	<u>Percent Success</u>	<u>Goal</u>
Engineering items:	39	37	95	
Documentary items:	10	10	100	
Digital items:	4	4	100	
Total:	53	52	98	97%

- b. Documentary Coverage: All items were activated and ran as planned.
- c. Engineering Coverage: All items supporting landing were activated, runway 15 items captured no images due to a landing on runway 33. EL8, covering runway 33 had a short run. The error is under investigation. Both of the On-board DBM-10 ET Separation cameras were flown on this mission. Film was retrieved and sent to Miami for processing.

d. Digital Coverage

- Four digital cameras, three Nikons and one on loan from Olympus were used in support of this landing.

e. Lateral Support

- Communications on G-net seem to be unreliable. VITC will continue to investigate and have all radios undergo a maintenance cycle.
- The Pilot Point of View (PPV) video feed from LCC was provided on this landing. Unfortunately, due to last minute connection of pilot point of view to POCS console from LCC, cameras were started earlier than usual.
- This view has become the best source to determine the correct moment to activate cameras.
- POCS no longer uses RF to start runway cameras. Hard wire lines have been put in place. All starts from POCS were received with the exception of EL6 (runway 55.) The EL6 no run was a result of a failure on Comm Link "A." CSR is investigating the failure.

4. EQUIPMENT PROBLEMS/MALFUNCTIONS

- | | |
|----------------------------|-------|
| a. Lack of start receipts: | 1 |
| b. Procedural errors: | None. |
| c. System damage: | None. |

5. LABORATORY SUPPORT

- | | |
|--------------------------------|------------|
| a. Still photo lab support: | Excellent. |
| b. Motion picture lab support: | Excellent. |

c. DATA SHIPMENT STATUS

- a. Requirements were met in normal sequence.
- b. Items were FED-EXed from Miami to customers

REPORT
T+2WD

DISCREPANCY/MALFUNCTION SUMMARY

OPERATION L4251
SHUTTLE ATLANTIS, STS-112 LANDING
18 October 2002

NO.	CAR #	ITEM #	EQUIPMENT/ECN	SITE	DISCREPANCY	CAUSE	ACTION AGENCY	ECD	CAR STATUS	TEST STATUS
1.		EL8	35/Photosonic	Site 4	Short run	Under investigation	VITC	12-3-02		Landing 19 Apr 02
2.		EL6	POCS System (35/Photosonic)	Site 1	No run	Comm link "A" failed during landing resulting in a no run for this item. Due to a landing on runway 33 there was no data loss, however; a full determination will be made to restore confidence in this system.	CSR	12-3-02		Landing 19 Apr 02

Johnson Controls, Inc.
Visual Information Technical Contract Project
Cape Canaveral Air Station
Post Office Box 1029
Cape Canaveral, FL 32920-1029

JOHNSON
CONTROLS

No console
log.

09 October, 2002

NASA
Mr. Charles T. Brown, TA-B2-C
Communications Division
Kennedy Space Center, FL 32899

SUBJECT: CONTRACT NUMBER FO8650-98-D-0018; CLIN 0006 (CDRL POST OPERATION CRITIQUE)

In response to CDRL requirements, Operation F2875, Shuttle ATLANTIS, STS 112 launch, please see the T+2 working day report attached. The report consists of the Console Log, Post Operation Critique Report and Discrepancy/Malfunction Summary

If further coordination is required, please contact this office at 853-2108.



William Bender
Operations Manager

WB

Cc: Chas Abell

Post Operation Critique Report
CDRL A004

Operation: F2875 STS-112 Orbiter: Atlantis
7 October 2002

1. MILESTONE SUPPORT EVENTS:

- | | |
|---------------------------------|-----------------------------|
| a. Planning Document completed: | September 3, 2002 |
| b. Rough set of equipment: | September 27, 2002 |
| c. Final Greenline checkout: | October 6, 2002 |
| d. Launch | October 7, 2002; 1545 Local |
| e. Film retrieval | October 7, 2002 |
| f. Product delivery: | October 8 & 9, 2002 |
| g. Equipment recovery: | October 8 & 9, 2002 |

2. CAMERA COVERAGE

<u>CATEGORY:</u>	<u>MO.PIC.</u>	<u>STILL</u>	<u>VIDEO</u>	<u>TOTAL</u>
a. Documentary	4	28	18	50
b. Engineering	63	7	15	85
c. Digital	0	19	0	19
TOTAL	67	54	33	154

3. CONDUCT OF OPERATION

a. OVERVIEW:

- The launch of STS-112 occurred on 07 October 2002, at 1545 Local, or at 07 October 2002, 1945Z.

Category	Committed Items	Successful Items	Percent Success	Goal
a. Engineering items:	85	83	98%	
b. Documentary items:	50	50	100%	
c. Digital items:	19	19	100%	
Total:	154	153	99%	97%

b. Emergency Camera Coverage:

- Emergency cameras were not activated

c. Documentary Coverage:

- All contracted documentary cameras ran according to plan.
- Two documentary items were obscured by condensation due to rain earlier in the day.

d. Engineering Coverage

- Item E63 (35 Photosonic) had a short run. Camera was started at T-0. Only 22 of 400 feet of film ran due to a magazine jam. Requirement was partially met.
- Item E68 (35 Photosonic) had a short run. Camera was started at T-0. Only 55 of 400 feet of film ran due to a magazine jam. Requirement was partially met.

e. Digital Coverage

- All digital cameras ran according to plan.

f. Lateral Support

- On October 4, 2002, Camera Control Module 6 (CCM 6) failed causing the POCs console to be reset. Additionally, Test Console 1 (TC1) also failed. CCM6 was repaired and returned to service, TC1 still remains out of commission. Test control function was transferred to TC2.
- Perimeter Site 6 was unreliable early in the set up process. During launch, auto track at Site #2 was unresponsive. Auto track will only be used for LOV.
- Radio G net was not fully functional. Weak reception at various sites made communications difficult. Intense solar activity could be a factor. All radios are due to undergo a calibration cycle.

4. EQUIPMENT PROBLEMS/MALFUNCTIONS

- a. Lack of starts receipts: All starts were received, however; the continuous/discontinuous countdown clock stopped at T+3 for approximately 1 minute 43 seconds. As a result, Items E6, E7, E10, E11, E14, & E31 ran for duration of approximately 8 seconds then received a stop signal as a result of the stopped (discontinuous) clock. It is expected that the items captured sufficient action to meet the required objectives.
- b. Procedural errors: No problems encountered as of this report. Greater discipline is required when using "G" net.
- c. System damages: Item D39 (Nikon 35 mm) sustained blast damage. Camera viewfinder was damaged; the motor drive (MD4) and the 250-exposure back (MF4) were damaged beyond economical repair. Final product was retrieved and processed fulfilling requirement.

5. LABORATORY SUPPORT

- Still photo lab support: All requirements were met
- Motion picture lab support: All requirements were met.

6. DATA SHIPMENT STATUS

- Contract requirements were met.

T+2WD

DISCREPANCY/MALFUNCTION SUMMARY

ATLANTIS, STS-112 LAUNCH, F2875

07 OCTOBER, 2002

NO.	CAR #	ITEM #	EQUIPMENT/ECN	SITE	DISCREPANCY	CAUSE	ACTION AGENCY	FORM 1998 ECD	CAR STATUS	TEST STATUS
1.		E63	35mm photosonic	39-4 09	Film jam in magazine	Under investigation	Maintenance			Launch 7-Oct 02
2.		E68	35mm photosonic	UCS #6	Film jam in magazine	Under investigation	Maintenance			Launch 7-Oct 02

Johnson Controls, Inc.
Visual Information Technical Contract Project
Cape Canaveral Air Station
Post Office Box 1029
Cape Canaveral, FL 32920-1029

JOHNSON
CONTROLS

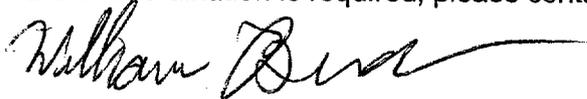
18 July 2002

NASA
Mr. Charles T. Brown, TA-B2-C
Communications Division
Kennedy Space Center, FL 32899

**SUBJECT: CONTRACT NUMBER FO8650-98-D-0018; CLIN 0006 (CDRL POST
OPERATION CRITIQUE)**

In reference to Operation F2342, Shuttle Endeavor, STS 111 launch, please see the T+30 working day report attached. The report consists of the Discrepancy/Malfunction Summary.

If further coordination is required, please contact this office at 853-2108.



William Bender
Operations Manager

WB/jt

Cc: Chas Abell

**FOLLOW-UP REPORT
T+30WD**

**DISCREPANCY/MALFUNCTION SUMMARY
ENDEAVOUR, STS-111 LAUNCH, F2342
05 June, 2002**

NO.	CAR #	ITEM #	EQUIPMENT/ECN	SITE	DISCREPANCY	CAUSE	ACTION AGENCY	FORM 1998 ECD	CAR STATUS	TEST STATUS
1.		E-224	35mm photosonic 35mm magazine ECN 06558	UCS #16	Camera ran 150 feet, then magazine jammed. Film tracked off into lower sprockets of magazine.	While performing service to the magazine after the failure, a small metal chip was discovered in the sprocket drive mechanism. It is this metal chip that caused the film to track off the sprockets. This failure will require the entire magazine movement to be rebuilt. The chip originated from earlier fabrication of the magazine housing.	Maintenance	7/16/02		Launch 5 Jun 02

Johnson Controls, Inc.
Visual Information Technical Contract Project
Cape Canaveral Air Station
Post Office Box 1029
Cape Canaveral, FL 32920-1029

JOHNSON
CONTROLS

21 June 2002

NASA
Mr. Charles T. Brown, TA-B2-C
Communications Division
Kennedy Space Center, FL 32899

**SUBJECT: CONTRACT NUMBER FO8650-98-D-0018; CLIN 0006 (CDRL POST
OPERATION CRITIQUE)**

In reference to Operation F2342, Shuttle Endeavor, STS 111 launch, please see the T+12 working day report attached. The report consists of the Discrepancy/Malfunction Summary.

If further coordination is required, please contact this office at 853-2108.



William Bender
Operations Manager

WB/jt

Cc: Chas Abell

**FOLLOW-UP REPORT
T+12WD**

**DISCREPANCY/MALFUNCTION SUMMARY
ENDEAVOUR, STS-111 LAUNCH, F2342
05 June, 2002**

NO.	CAR #	ITEM #	EQUIPMENT/ECN	SITE	DISCREPANCY	CAUSE	ACTION AGENCY	Form 1998 ECD	CAR STATUS	TEST STATUS
1.		E-224	35mm photosonic 35mm magazine ECN 06558	UCS #16	Camera ran 150 feet, then magazine jammed. Film tracked off into lower sprockets of magazine.	While performing service to the magazine after the failure, a small metal chip was discovered in the sprocket drive mechanism. It is this metal chip that caused the film to track off the sprockets. This failure will require the entire magazine movement to be rebuilt. The chip originated from earlier fabrication of the magazine housing.	Maintenance	7/16/02		Launch 5 Jun 02

Johnson Controls, Inc.
Visual Information Technical Contract Project
Cape Canaveral Air Station
Post Office Box 1029
Cape Canaveral, FL 32920-1029

JOHNSON
CONTROLS

06 June 2002

NASA
Mr. Charles T. Brown, TA-B2-C
Communications Division
Kennedy Space Center, FL 32899

**SUBJECT: CONTRACT NUMBER FO8650-98-D-0018; CLIN 0006 (CDRL POST
OPERATION CRITIQUE)**

In reference to Operation F2342, Shuttle Endeavor, STS 111 launch, please see the T+2 working day report attached. The report consists of the Console Log, Post Operation Critique Report and Discrepancy/Malfunction Summary.

If further coordination is required, please contact this office at 853-2108.



William Bender
Operations Manager

WB/jt

Cc: Chas Abell

**FOLLOW-UP REPORT
T+2WD**

DISCREPANCY/MALFUNCTION SUMMARY
ENDEAVOUR, STS-111 LAUNCH, F2342
05 June, 2002

NO.	CAR #	ITEM #	EQUIPMENT/ECN	SITE	DISCREPANCY	CAUSE	ACTION AGENCY	Form 1998 ECD	CAR STATUS	TEST STATUS
1.		E-224	35mm photosonic 35mm magazine ECN 06558	UCS #16	Camera ran 150 feet, then magazine jammed. Film tracked off into lower sprockets of magazine.	Under investigation	Operations	7/16/02		Launch 5 Jun 02

Post Operation Critique Report
CDRL A004

Operation: F2342 STS-111 Orbiter: Endeavour
5 June 2002

1. MILESTONE SUPPORT EVENTS:

- a. Planning Document completed: May 6, 2002
- b. Rough set of equipment: May 28, 2002
- c. Final Greenline checkout: June 4, 2002
- d. Launch: June 5, 2002; 1722 Local
- e. Film retrieval: June 5, 2002
- f. Product delivery: June 6 & 7, 2002
- g. Equipment recovery: June 7, 2002

2. CAMERA COVERAGE

<u>CATEGORY:</u>	<u>MO.PIC.</u>	<u>STILL</u>	<u>VIDEO</u>	<u>TOTAL</u>
a. Documentary	4	28	18	50
b. Engineering	63	7	15	85
c. Digital	0	19	0	19
TOTAL	67	54	33	154

3. CONDUCT OF OPERATION

a. OVERVIEW:

- The launch of STS-111 occurred on 05 June 2002, at 1722 Local, or at 05 June 2002, 2122Z.

Category	Committed Items	Successful Items	Percent Success	Goal
a. Engineering items:	85	84	99%	
b. Documentary items:	50	50	100%	
c. Digital items:	19	19	100%	
Total:	154	153	99%	97%

b. Emergency Camera Coverage:

- Emergency cameras were not activated

c. Documentary Coverage:

- All contracted documentary cameras ran according to plan.

d. Engineering Coverage

- Item E224 had a short run. Camera was started at T-0. Only 150 of 400 feet of film ran due to a magazine jam. Requirements were met.

e. Digital Coverage

- All digital cameras ran according to plan. Additional digital items were added

f. Lateral Support

- Support for remote trackers at Perimeter Sites 2 and 6 was present before and during the scheduled launch operation. CSR provided exceptional support during launch and also during post operation retrieval.
- Radio G net continues to operate reliably.

4. EQUIPMENT PROBLEMS/MALFUNCTIONS

- a. Lack of starts receipts: No problems encountered.
- b. Procedural errors: No problems encountered as of this report
- c. System damage: No problems encountered as of this report.

5. LABORATORY SUPPORT

- Still photo lab support: All requirements were met
- Motion picture lab support: All requirements were met.

6. DATA SHIPMENT STATUS

- Contract requirements were met.

Operation Number	F2342	Date	
Activity	Pre-launch Prep		

5/22/02	MOTS Elevation inop Trouble Ticket 270777 - Circuit # 2CLM 25%
5/29/02	MOTS FMC
0830	Final G/L DAY - Problem w/ 9-21 TSM camera. Caused some delay, but resolved.
5/30/02 1330	Personnel reporting to forward observer sites as per OMI
	Per checklist all items green except: D-067, SC50A site 2 outlying POC ID 109
1915	Scrubbed for wx.
2000	24 hour scrub - checklist for scrub complete. New T=0 1917-1927
2400	Access to PAD A to change batteries.
0145	Not perform on Sequence 30 steps for film reload, but did note camera batteries changed. May need to modify OMI due to changes in camera.
0200	Console secure - notified STW -

JOHNSON CONTROLS

VISUAL INFORMATION TECHNICAL CONTRACT
(VITC)
SHUTTLE CONSOLE OPERATION
SUPPORT LOG -- JPHO

Operation Number	F2342 STS111	Date	6/4/02
Activity	Greenline		

Time	Action/Comments
6/4/02	After several slips, STS111 set for 5 sensor T=0 @ 1718-1723
	Report of Power drop-out on 6/3/02 and system completely down. CR able to reload flat file and re-configure system. System, emergency all check okay.
6/5/02 1100	all items green. MILA readouts good CDC remains in Gen mode.
1530	CDC to CD 1 - white room D-32 - @ 67 exposures (1st attempt used 103 exposures)
1702	MORS is having intermittent video dropout. Problem reported & being monitored.
1722	Launch
	E1 & 29 remained blue (running mode) appear to be short run
	B link of E 39 Red - looks like good run

Film Review for STS-111

Film review took place on 6-7 Jun 2002 for STS-111. The following photographic quality comments and observations were noted for engineering film items:

Perimeter Sites:

E-60. Site 1 – 35mm PS. Good set-up, focus and exposure.

E-61. Site 1 – 35mm PS. Good set-up, focus and exposure. Delete for future launches.

E-64. Site 2—35mm PS. Good set-up, focus and exposure. Delete for future launches.

E-52 Site 2 Tracker, 35mm PS. Good focus and exposure. Could be bore-sighted slightly higher. Video dropped out for a few seconds resulting in erratic track. When projected, image jumps.

E-54. Site 2 Tracker, 35mm PS. Good focus and exposure. Could be bore-sighted slightly lower. Video dropped out for a few seconds resulting in erratic track.

E-62. Site 3 – 35mm PS. Good set-up, focus and exposure.

E-63. Site 3 – 35mm PS. Good set-up, focus and exposure.

E-76. Site 3 – 35mm PS. Good set-up, focus and exposure. When projected, image jumps.

E-77. Site 4 – 35mm PS. Good set-up, focus and exposure.

E-57. Site 6 tracker. Could be bore-sighted slightly higher. Do not zoom once bore sight is set – causes image to move left if zoomed in.

E-59. Site 6 tracker. Could be bore-sighted slightly lower. Do not zoom once bore sight is set – causes image to move left if zoomed in. . When projected, image jumps.

MLP:

E-1. MLP – 16mm PS. Good focus. Slightly dark at start.

E-2. MLP – 16mm PS. Dark at start. Good focus. Something in box is vignetting upper and lower right corner of film frame.

E-3. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-4. MLP – 16mm PS. Dark at start. Got too dark when solids appear. Change lens limit from f16 to f8.

E-5. MLP – 16mm PS. Slightly dark at start. Good focus..

E-6. MLP – 16mm PS. Good. This is the single item on MLP that runs at 200 fps. Coordinate with MSFC to run at 400 fps. KSC concurs with change.

E-7. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-8. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-9. MLP – 16mm PS. Good focus. Dark at start but acceptable. Extreme camera shake. Short run – camera slows down and stops.

E-10. MLP – 16mm PS. Good.

E-11. MLP – 16mm PS. Good focus. Dark at start but acceptable. Narrow dark scratch down center of film. Scratch moves left and right slightly – suspect camera scratch. Check negative.

E-12. MLP – 16mm PS. Good focus. Dark at start but acceptable. Some camera shake.

E-13. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-14. MLP – 16mm PS. Good focus and exposure.

E-15. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-16. MLP – 16mm PS. Good focus. Dark at start but acceptable.

E-17. MLP – 16mm PS. Good focus. A little dark but acceptable.

E-18. MLP – 16mm PS. Good focus. A little dark but acceptable.

E-19. MLP – 16mm PS. Good focus. Dark at start but acceptable. Some camera shake noted.

E-20. MLP – 16mm PS. Good focus and exposure. Some camera shake noted.

E-21. MLP – 16mm PS. Good focus and exposure.

E-22. MLP – 16mm PS. Good focus and exposure.

FSS:

- E-31. FSS – 16mm PS. Good set-up, focus. Dark at start but acceptable.
- E-33. FSS- 16mm PS. Good set-up, exposure. Slightly soft in focus. This item shot in the past with 100mm lens. This item done with 75mm lens this launch. Change to 75mm lens for future launches.
- E-34. FSS – 16mm PS. Good set-up and exposure. Focus slightly soft.
- E-36. FSS – 16mm PS. Good set-up, focus and exposure.
- E-39. FSS – 16mm PS. Good set-up and focus. Print slight dark.
- E-40. FSS – 16mm PS. Good set-up and focus. Print slight dark.
- E-41. FSS – 16mm PS. Good set-up and focus.
- E-42. FSS – 16mm PS. A little dark at start. Ocean in background exposed good but tower at left dark. Ok after solids light.

Trackers:

- E-205. Shiloh – 35mm PS. Good track focus and exposure. Film had fog on it right side and bottom. Appears to be chemical or heat fog.
- E-213. MOTS at UCS 12 – 35mm PS. Good set-up, focus and exposure. Bore site good. Looking almost into sun at start, so very backlit at start.
- E220. Tracker at U247 – 35mm PS. Good set-up, focus and exposure. Good track – somewhat degraded by haze.
- E-222. South Beach Tracker – 35mm PS. Good set-up, focus and exposure. Good track – degraded by being backlit and hazy. Fiber on right side of frame at start that disappeared after about half of run. When projected – jitter appears.
- E-223. Tracker at UCS 9 – 35mm PS. Good set-up, focus and exposure. Good track, with one temporary loss just prior to separation. Track degraded by heat shimmer and haze.
- E-224. Tracker at UCS 16 – 35mm PS. Good set-up, focus and exposure. Camera started at T=0 which was late. Camera should be started at minus 7-10 seconds. Good track even through some cloud cover. Camera stopped at about 250 feet of 400 foot roll.

WON 37469. Tracker at U247 – 35mm PS. This was for a 35mm to 70mm comparison for item E202. This item blew a fuse at start. This item had 50 ASA Daylight film which will be held and shot on the next launch.

WON 37479. Tracker at UCS-9 – 35 mm PS. This was for a 35mm to 70 mm comparison for item E201. This item ran about 200 feet and blew a fuse. This item will be evaluated once the 70mm is processed.

Metrics:

E-204. PIGOR. 35mm Mitchell. Good track – image degraded by haze. Three solid pieces of debris in top of frame though entire film. Opaque and did not move. Also, fogging on film on right side and bottom – appears to be either heat or chemical fogging. Same type of fogging as on E205.

E-207. PL DOAMS. 35mm PS. Good track – somewhat degraded by haze.

E-208. CB DOAMS. Good track once acquired – somewhat degraded by atmospheric distortion and haze.

E-212. ATOTS at UCS 23 – 35mm Mitchell. Good track – degraded by haze. Fiber on lower left side of frame – anchored at left and waving. Also had fogging on right side and bottom of frame. Fogging similar to that on E204 and E205. This item is the best candidate for 35 mm Photo-Sonics camera change out.

TEST: STS-112 LANDING
DATE: OCTOBER 18, 2002
OPS NO.: L2876

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/NUMBER	COMMENTS
40180	DL007	RF SITE 3 POCS 1522	FILM 35MM	NONE	MISSED LANDING. END OF ROLL.
40181	DL008	RF SITE 3 POCS 1523	FILM 35MM	NONE	SMALL IMAGE
40183	DL010	RF SITE 4 POCS 1528	FILM 35MM	NONE	NO GOOD. MISSED SHUTTLE.
40184	DL011	SIT SITE 1 POCS 433	FILM 35MM	NONE	BAD. OUT OF FOCUS.
40185	DL012	SIT SITE 4 POCS 439	FILM 35MM	(2) TO KSC 00PP-1596 00PP-1597 (1) TO JSC	FILM DIRTY AND SCRATCHED. HAD TO FIX IN PS.
40186	DL013	OUTLYING SITE B/KTM	FILM 70MM	NONE	IMAGE TOO SMALL
40187	DL014	OUTLYING SITE A/KTM	FILM 70MM	(1) TO KSC 00PP-1598 (1) TO JSC	NONE
40188	DL015	OUTLYING SITE D/KTM	FILM 70MM	(1) TO KSC 02PP-1599	IMAGE SIZE SMALL.
40189	DL016	OUTLYING SITE E/KTM	FILM 70MM	(1) TO KSC 02PP-1600 (1) TO JSC	NONE
40195	DL024	OUTLYING S.E. SIDE	FILM 35MM	NONE	CAMERA HAS LIGHT LEAK ON RIGHT SIDE
40196	DL025	OUTLYING N.E. SIDE	FILM 35MM	NONE	MISSED TOUCHDOWN
40202	DX001	RF SITE 3 POCS 1532	FILM 70MM	NONE	MISSED TOUCHDOWN

TEST: STS-112 LAUNCH
DATE: OCTOBER 7, 2002
OPS NO.: F2875

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
40429	?	VIP VIEWING SITE	FILM 35MM	NONE	NONE
39669	D32	FSS-WHITE ROOM 21A	FILM 35MM	(6) TO KSC 02PP-1483 02PP-1484 02PP-1485 02PP-1486 02PP-1487 02PP-1488 (6) TO JSC	NONE
39670	D34	RSS-210' LEVEL	FILM 35MM	NONE	START WRONG. SHUTTLE DID NOT LAUNCH. CAMERA APPEARS TO HAVE RUN EARLY AS THE BEANIE CAP IS STILL ON TOP OF ET.
39671	D36	FSS-260' 25C	FILM 35MM	(1) TO KSC 02PP-1479	NONE
39672	D39	FSS-280' 27A	FILM 35MM	(1) TO KSC 02PP-1476	NONE
39677	D56	39-2 12	FILM 70MM	(1) TO KSC 02PP-1467	PLEASE LOOK AT THIS FILM. THE START TIME NEEDS ADJUSTED. SHUTTLE JUST BARELY OFF OF PAD BEFORE FILM IS FOGGED.
39678	D57	39-3 12	FILM 120MM	(1) TO KSC 02PP-1468	NONE
39679	D58	39-4 01A	FILM 70MM	(1) TO KSC 02PP-1469 (1) TO HQ PA (1) TO JSC PA (1) TO MSFC	NONE
39680	D60	39-3 13	FILM 70MM	(1) TO KSC 02PP-1470 (1) TO HQ PA (1) TO JSC PA (1) TO MSFC	NONE

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
39681	D67	39-2 TKR	FILM 35MM	NONE	CAMERA NOT POSITIONED CORRECTLY CLOSE IN VIEW. DOES NOT HAVE COMPLETE SHUTTLE.
39683	D75	OUTLYING FIXED	FILM 70MM	NONE	NO GOOD. SMOKE
39684	D76	OUTLYING FIXED	FILM 70MM	(1) TO KSC 02PP-1471 (1) TO JSC PA (1) TO HQ PA (1) TO MSFC	NONE
39685	D77	OUTLYING FIXED	FILM 70MM	(1) TO KSC 02PP-1473 (1) TO JSC PA (1) TO HQ PA (1) TO MSFC	NONE
39686	D78	OUTLYING FIXED	FILM 35MM	(1) TO KSC 02PP-1478	NONE
39688	D80	OUTLYING FIXED	FILM 35MM	(1) TO KSC 02PP-1477	NONE
39689	D87	OUTLYING FIXED	FILM 70MM	(1) TO KSC 02PP-1472 (1) TO JSC PA (1) TO HQ PA (1) TO MSFC	NONE
39691	D90	OUTLYING VAB ROOF	FILM 35MM	(2) TO KSC 02PP-1474 02PP-1475	NONE

Photo Film Critique of STS-112 EOM Engineering Films

Landing of STS-112 occurred on 18 Oct 2002 at 1144 at KSC. Film review was conducted on 22 Oct.

Item #	Location	Crew	Camera	Comments
EL001	Site B/KTM	Kechele Hernandez	35PS	Overexposed – print acceptable. Good focus and track.
EL002	Site C/S. Tower	Murray	35PS	Overexposed – print acceptable. Good focus and track. Vegetation obscures view of orbiter.
EL004	Site F/N. Tower	Jackson	35PS	Good focus, exposure, and track. Vegetation obscures view of orbiter.
EL006-OA	Site 1/POC ID 430 (fixed/remote)	Kechele Hernandez	35PS	This item supports a runway 15 landing
EL007	Site 1/POCS ID 431 (fixed/remote)	Kechele Hernandez	35PS	Good focus and exposure. Camera started early.
EL008-OA	Site 4/POC ID 436 (fixed/remote)	Kechele Hernandez	35PS	Early start and camera jam. Exposure and focus good.
EL009	Site 4/POCS ID 437 (fixed/remote)	Kechele Hernandez	35PS	Good focus and exposure.
EL010	Site A/KTM	Kight	35PS	Good focus, exposure, and track. Late acquisition. Vegetation obscures view of orbiter.
EL012	Site E/KTM	Terry Fox	35PS	Good focus, exposure, and track.
EL015	Site D/KTM	Wetherington	35PS	Late acquisition. Good focus, exposure, and track – once acquired. Vegetation obscures view of orbiter.
EL030-OA	UCS-9/KTM	Joseph	16PS	This item primarily supports a runway 15 landing. Orbiter not acquired.
EL031-OA	UCS-15/FLOT	Roquevert	16PS	This item primarily supports a runway 33 landing. Orbiter not acquired.

Note: Zero frame identifiers were omitted on the two on-board 16mm films – FL101 and FL102. Also both on-board film sent to JSC were labeled FL102.

Film Review for STS-112

Film review took place on 9 -- 10 Oct 2002 for STS-112 launch. The timing lights used to print the original film to an engineering print are provided. Normal timing is 25 Red, 25 Green and 25 Blue. Higher numbers indicate a dense original negative requiring higher light values needed to make an acceptable print. Lower numbers would indicate a thin, underexposed negative. About 8 points equals one f stop.

The following photographic quality comments and observations were noted for engineering film items:

Perimeter Sites:

E-60. Site 1 -- 35mm PS. Good set-up, focus and exposure. Timing lights 29/37/32. Good print.

E-52. Site 2 Tracker, 35mm PS. Good focus. Overexposed. Timing lights 30/40/36. Could be bore-sighted slightly higher. Initial attempt to use auto-track resulted in erratic track. Stops down too much at SRB ignition. Print is dark at start with insufficient detail in shadows.

E-54. Site 2 Tracker, 35mm PS. Good focus. Overexposed. Timing lights 32/40/35. Could be bore-sighted slightly lower. Initial attempt to use auto-track resulted in erratic track. Good print.

E-62. Site 3 -- 35mm PS. Good set-up, and focus. Overexposed. Timing lights 42/50/46. Print good -- very bright.

E-63. Site 3 -- 35mm PS. Good set-up, and focus. Overexposed. Timing lights 42/50/44. Print good --very bright. Short run -- camera stopped prior to aft skirt clearing tower -- plus 4 seconds.

E-76. Site 3 -- 35mm PS. Badly overexposed. Timing lights 46/50/43. Condensation and fogging made print unusable. Short run. Reason for overexposure is under investigation.

E-77. Site 4 -- 35mm PS. Good set-up and focus. Very over exposed. Timing lights 43/50/44. Reason for overexposure is under investigation.

E-57. Site 6 tracker. Good exposure. Timing lights 28/36/32. Print good. Could be bore-sighted slightly higher -- but acceptable. Not on track from lift off to 1200 feet as required by PADD. After 1200 feet, track okay.

E-59. Site 6 tracker. Somewhat overexposed. Timing lights 30/38/34. Print good. Could be bore-sighted slightly higher -- but acceptable. Not on track from lift off to 1200 feet as required by PADD. After 1200 feet, track okay.

MLP:

E-1. MLP – 16mm PS. Good focus. Somewhat overexposed. Timing lights 31/38/36. Print good.

E-2. MLP – 16mm PS. Dark at start. Good focus. Somewhat overexposed. Timing lights 34/43/32. Stops down a bit too much at ignition. Lens limits now at f11 – consider f-stop limit of f8.0 for this item.

E-3. MLP – 16mm PS. Good focus. Somewhat overexposed. Timing lights 36/44/41. Print a little dark at start.

E-4. MLP – 16mm PS. Somewhat overexposed. Timing lights 31/38/36. Print dark at start. Print got too dark when solids ignite. Change lens limit from f16 to f11.

E-5. MLP – 16mm PS. Somewhat overexposed. Timing lights 30/37/35. Slightly dark at start.

E-6. MLP – 16mm PS. Somewhat overexposed. Timing lights 29/36/34. Print is slightly dark at start. This is the first launch that this item was run at 400 fps. Previously this item was run at 200 fps.

E-7. MLP – 16mm PS. Good focus. Slightly overexposed. Timing lights 26/33/31. Print is slightly dark at start, but acceptable.

E-8. MLP – 16mm PS. Good focus. Somewhat overexposed. Timing lights 30/37/35. Print is dark at start but acceptable.

E-9. MLP – 16mm PS. Good focus and exposure. Timing lights 22/28/24. Good print.

E-10. MLP – 16mm PS. Focus good. Slightly underexposed. Timing lights 17/22/19. Print slightly dark at start.

E-11. MLP – 16mm PS. Good focus and exposure. Timing lights 24/29/26. Print good.

E-12. MLP – 16mm PS. Good focus and exposure. Timing lights 24/29/25. Print is dark at start but acceptable.

E-13. MLP – 16mm PS. Good focus and exposure. Timing lights 27/33/29. Print is slightly dark but acceptable.

E-14. MLP – 16mm PS. Good focus and exposure. Timing lights 22/27/25. Print is a little dark. Prime objective on this item is to see hold-down post – which was too dark.

E-15. MLP – 16mm PS. Good focus and exposure. Timing lights 24/30/30. Overall good print. At SRB ignition, lens did stop down, but acceptable.

E-16. MLP – 16mm PS. Good focus and exposure. Timing lights 24/30/30. Print is slightly dark, but acceptable.

E-17. MLP – 16mm PS. Good focus and exposure. Timing lights 21/28/28. Print is dark.

E-18. MLP – 16mm PS. Good focus and exposure. Timing lights 21/26/24. Print is good.

E-19. MLP – 16mm PS. Good focus and exposure. Timing lights 27/32/30. Print good until SRB ignition, and then gets too dark. Lens limit was set to f11 and should be changed to f8.

E-20. MLP – 16mm PS. Good focus. Slightly overexposed. Timing lights 31/36/34. Good print.

E-21. MLP – 16mm PS. Good focus. Negative was overexposed. Timing lights 36/43/38. Print was slightly dark but acceptable.

E-22. MLP – 16mm PS. Good focus. Somewhat overexposed. Timing lights 30/37/32. Good print.

FSS:

E-31. FSS – 16mm PS. Good set-up, focus. Exposure good. Timing lights 27/32/18. Print is dark in shadows, but acceptable.

E-33. FSS- 16mm PS. Good set-up, focus, and exposure. Printing lights 29/33/20. Good print. This item shot in the past with 100mm lens. This item is now shot with 75mm lens – providing a slightly wider field of view.

E-34. FSS – 16mm PS. Somewhat overexposed. Timing lights 37/41/26. No other notes taken for this item.

E-36. FSS – 16mm PS. Good set-up, and focus. Somewhat overexposed. Timing lights 38/43/29. Print too dark in shadows.

E-39. FSS – 16mm PS. Good set-up and focus. Exposure good. Printing lights 31/35/22. Print slightly dark.

E-40. FSS – 16mm PS. Good set-up and focus. Negative overexposed. Printing lights 40/43/30. Print is too dark.

E-41. FSS – 16mm PS. Good set-up, focus and exposure. Timing lights 22/29/26. Good print. Edges of camera housing vignettes picture slightly in all four corners.

E-42. FSS – 16mm PS. Water or condensation on protective housing port completely obscures view. Focus and exposure not determined.

Trackers:

E-205. Shiloh – 35mm PS. Good focus and exposure. Timing lights 26/33/25. Track is somewhat erratic, but vehicle stays in frame. Digital timing is erratic. Display stays throughout track, but goes to wrong day and time for about 20 seconds, and then back to correct timing again.

E-213. MOTS at UCS 7 – 35mm PS. Boresight had vehicle in left side of frame. Very out of focus. Track very erratic. Item unusable – total data loss.

E220. Tracker at UCS-15 – 35mm PS. Good set-up, and focus. A little overexposed. Timing lights 33/39/33. Good initial track. At about 30 seconds into flight, track lost and never reacquired. There was no digital timing on film. An event, noted at about 38 seconds into flight, had to be timed using zero frame identifier and frames counted – providing only an approximate time.

E-222. North Beach Tracker – 35mm PS. Good set-up, and focus. Some what overexposed. Timing lights 38/45/40. Excellent track. End of film reached just prior to SRB separation. Print good.

E-223. Tracker at UCS 10 – 35mm PS. Good set-up, and focus. Somewhat overexposed. Timing lights 34/43/38. Good track, with one short temporary loss just prior to separation. Track degraded slightly due to tracker being shook by launch vibrations. Print good.

E-224. Tracker at UCS 6 – 35mm PS. Short run – magazine jammed just after start.

Metrics:

E-204. PIGOR. 35mm Mitchell. Excessively long time taken to acquire. Vehicle lost several times as it went in and out of clouds. Track okay once finally acquired. Focus and exposure acceptable. Printing lights 23/30/22.

E-207. PL DOAMS. 35mm PS. Good focus. Over exposed. Timing lights 40/46/49. Good track. Print good.

E-208. CB DOAMS. Out of focus – item unusable. Printing lights 38/46/39 which indicated film was over exposed. Print exposure good.

E-212. ATOTS at UCS 23 – 35mm Mitchell. Good focus, exposure and track. Timing lights 26/33/25. Good print. This item is the best candidate for 35 mm Photo-Sonics camera change out. This would provide digital timing.

Brown-3, Charles T

From: Bill Bender [Bill.Bender@vitc.patrick.af.mil]

Sent: Monday, November 25, 2002 3:18 PM

To: 'Brown-3, Charles T'

Cc: Bud Wellman

Subject: PAO RESPONSE

Chuck,

The 3 digital cameras placed in the outlying sites did not run (DD001, DD002, DD003). The initial indication is that the batteries on all sites drained prior to launch. An investigation as to the reason is underway. All items received freshly recharged batteries after the previous launch attempt on November 22. Additionally, all the items received POCS starts per the preloaded flat file. I find it difficult to believe that all 3 items would not run, however; this leads me to assess the occurrence as something common to Nikon power systems affected by the colder conditions that prevailed the night of November 23. To help mitigate the loss, every effort was made to provide a timely delivery of the negatives from all other imaging sites. The film was available for retrieval by 2145 EST and carried to Protecol for processing. Our PRD requirements are "access + 6 hours", with the exception of "access + 4 hours" for items D67, D80, D87. Digital items are delivered as available. I was told that the Press Site was closing at 2400 and not to bring the film until Monday morning, which was carried out as requested. Had I been given the opportunity, the film items would have been delivered as per PRD requirements.

At this stage, I am in the process of gathering information. After multiple launch attempts, the attention paid to the cameras in the field was greater than usual. This is the first occurrence of this nature and the fact that it impacted all the Nikon digital items leads me to look in that direction first. We are in the process of purchasing additional Nikon D100 cameras. An important feature of the D100 is the use of off the shelf batteries. I am thinking that this is a convenient alternative to correct this difficulty in the future.

I will inform you as to our progress in this matter.

Best Regards,

Bill

11/27/2002

Brown-3, Charles T

From: Robbie Robinson [Robbie.Robinson@vitc.patrick.af.mil]

Sent: Monday, December 02, 2002 3:11 PM

To: 'Abell, Chas'; 'Alex, Gus'; 'Alvord-1, William'; 'Amorosi, Vicki'; 'Auvil, Dave'; Bernie Harland; Bill Bender; Brent May; 'Brown, Charles'; Bud Wellman; Martin David P GM-13 45RMS/RMSF; 'DISLER, JONATHAN M.'; Hoover Donald T Contr CSR4150; George Jackson; Kenny Allen; Kleinfelder William F Contr CSR4150; Loper Phillip J Contr CSR4150; Stone Michael J Contr CSR4620; 'Newland, Glenn'; 'Oliu, Armando'; 'Page, Robert'; Rick Wetherington; 'Rieckhoff, Tom'; 'Rivera, Jorge'; Rampley Roger B GS-12 45RMS/RMSF; Sandy Van Hooser; Sharon Dunn @ KSC; 'Speece, Robert'; Tim Terry; 'Wolfe-1, Richard'; 'Wright, Robert'; 'Wright, Timothy'

Subject: Film Critique for STS-113 Launch

Attached is the Film Critique for STS-113 Launch. Three general issues degraded the overall quality of the films:

On 4 of the 35mm film items (E-60, E-62, E-57, and E-59) the prints were inverted on the reel.

On 14 of the 16mm prints, mostly from MLP and FSS, the prints are way too dark at start with no detail in shadow prior to ignition. This is the first night launch in some time, so it may be necessary to re-examine or review lab instructions for printing night launches. Since we change exposure on the fly, closing down from wide open at start to as many as 4 f-stops, we should have more detail in shadows prior to ignition and still not completely blooming out after ignition. Many of the other films (example, E-5, E-6, E-17 and E-18 all on the MLP) were shot under the same lighting conditions and the prints were excellent.

Comments during film review noted soft focus on two trackers (E-222 at South Beach, and E-224 at UCS 16). These two trackers are close to the PAD and are focused on the vehicle at the PAD. We use a wider aperture for a night launch - resulting in a much reduced depth-of-field. For night launches, it may be preferable to focus on hyperfocal distance.

<<Film ReviewSTS113lch.doc>>

Robbie Robinson
Photo Planner, Shuttle
Johnson Controls - VITC, 321 853-5387
JPHO Console (POCS) - 321 861-7266
Email: Robbie.Robinson@vitc.patrick.af.mil

12/03/2002

Film Review for STS-113

Film review took place on 25-26 Nov 2002 for STS-113 launch. The timing lights used to print the original film to an engineering print are provided. Normal timing is 25 Red, 25 Green and 25 Blue. Higher numbers indicate a dense original negative requiring higher light values needed to make an acceptable print. Lower numbers would indicate a thin, underexposed negative. About 8 points equals one f stop.

The following photographic quality comments and observations were noted for engineering film items:

Perimeter Sites:

E-60. Site 1 – 35mm PS. Good set-up, focus (very sharp), and exposure. Timing lights 17/21/15. Good print. Print inverted on reel – mirror image when projected.

E-52. Site 2 Tracker, 35mm PS. Good focus, exposure, and bore sight. Timing lights 33/30/16. Good track.

E-54. Site 2 Tracker, 35mm PS. Good focus, exposure, and bore sight. Timing lights 28/25/11. Good track.

E-62. Site 3 – 35mm PS. Good set-up, focus (very sharp), and exposure. Timing lights 17/21/15. Print good – very bright. AEC does stop down and darken print somewhat at liftoff, but limits are acceptable. Print inverted on reel – mirror image when projected.

E-63. Site 3 – 35mm PS. Good set-up, focus, and exposure. Timing lights 34/32/20. Late camera start. AEC stops down too much and print goes dark. F-stop limit now at f-8.0. Post in right side of frame obscures part of view. Is it possible to change positions to avoid seeing post? Move post? Change focal length?

E-76. Site 3 – 35mm PS. Good set-up, focus, and exposure. Timing lights 31/34/36. Late start and slow frame rate. POCS improperly programmed with start time – -0.5 seconds to + 10 seconds. Should have been –123 seconds to + 30 seconds. Slow frame rate is a result of camera not being up to speed.

E-77. Site 4 – 35mm PS. Good set-up, focus, and exposure. Timing lights 25/29/32.

E-57. Site 6 tracker. Timing lights 21/24/16. Good set-up, focus, and exposure. Print inverted on reel – mirror image when projected. OTV Camera bloomed just after T-0 resulting in lost track.

E-59. Site 6 tracker. Timing lights 21/24/15. Good set-up, focus, and exposure. Print inverted on reel – mirror image when projected. OTV Camera bloomed just after T-0 resulting in lost track.

MLP:

E-1. MLP – 16mm PS. Good focus. Detail in shadow acceptable. Timing lights 18/22/13. Print good. Camera shake noted.

E-2. MLP – 16mm PS. Dark at start but some detail in shadow. Good focus. Timing lights 28/32/25. A fiber was seen in the upper part of frame – appears to be in camera behind lens.

E-3. MLP – 16mm PS. Good focus. Timing lights 24/28/23. Print dark at start – more detail needed.

E-4. MLP – 16mm PS. Timing lights 35/38/27. Print way too dark at start – no detail until after ignition. Focus good.

E-5. MLP – 16mm PS. Timing lights 14/16/10. Focus good. Good print – very bright with good detail in shadow.

E-6. MLP – 16mm PS. Timing lights 24/27/17. Focus good. Good print – very bright with good detail in shadow.

E-7. MLP – 16mm PS. Good focus. Timing lights 38/41/31. Print is way too dark at start, no detail in shadows until after ignition.

E-8. MLP – 16mm PS. Good focus. Timing lights 32/35/25. Print is way too dark at start, no detail in shadows until after ignition.

E-9. MLP – 16mm PS. Good focus and exposure. Timing lights 24/21/8. Good print.

E-10. MLP – 16mm PS. Focus good. Timing lights 38/34/23. Print is way too dark at start, no detail in shadows until after ignition.

E-11. MLP – 16mm PS. Good focus and exposure. Timing lights 38/34/23. Print is way too dark at start, no detail in shadows until after ignition, too dark even after ignition.

E-12. MLP – 16mm PS. Good focus. Timing lights 26/25/13. Print is way too dark at start, very little detail in shadows until after ignition.

E-13. MLP – 16mm PS. Good focus. Timing lights 26/25/13. Print is too dark at start, very little detail in shadows until after ignition.

E-14. MLP – 16mm PS. Good focus. Timing lights 26/25/13. Print is way too dark at start, no detail in shadows until after ignition.

E-15. MLP – 16mm PS. Good focus. Timing lights 33/33/23. Print is way too dark at start, no detail in shadows until after ignition.

E-16. MLP – 16mm PS. Good focus and exposure. Timing lights 33/33/23. Good focus. Timing lights 22/27/25. Print is way too dark at start, no detail in shadows until after ignition.

E-17. MLP – 16mm PS. Timing lights 18/18/09. Good focus and exposure. Timing lights 21/26/24. Print is good, but not quite as bright as E-18.

E-18. MLP – 16mm PS. Good focus and exposure. Timing lights 18/18/09. Print is good.

E-19. MLP – 16mm PS. Good focus and exposure. Timing lights 20/19/12. Print good until SRB ignition, and then gets too dark. Lens limit was set to f11 and should be changed to f8.

E-20. MLP – 16mm PS. Good focus. Timing lights 20/19/12. Good print with good detail in shadow. Camera shake noted.

E-21. MLP – 16mm PS. Timing lights 30/29/14. Print acceptable. Focus set on near objects, door of TSM and Disconnects soft.

E-22. MLP – 16mm PS. Good focus. Timing lights 03/28/14. Good print.

FSS:

E-31. FSS – 16mm PS. Good set-up, focus. Exposure good. Timing lights 17/18/07. Print acceptable.

E-33. FSS- 16mm PS. Good set-up, focus, and exposure. Printing lights 15/16/07. Print somewhat dark, but acceptable.

E-34. FSS – 16mm PS. Timing lights 18/19/10. Very dark at start with little detail in shadow until after ignition. Focus slightly soft.

E-36. FSS – 16mm PS. Good focus. Timing lights 17/19/11. Print acceptable. Bore-sight too high. Objective: left wing tip to be located in bottom edge of frame. Wing tip was outside of frame.

E-39. FSS – 16mm PS. Good set-up and focus. Exposure good. Printing lights 22/22/14. Print slightly dark at start.

E-40. FSS – 16mm PS. Good set-up and focus. Printing lights 16/16/08. Print acceptable.

E-41. FSS – 16mm PS. Good set-up and focus. Timing lights 18/18/11. Print is dark with little detail in shadow prior to ignition.

E-42. FSS – 16mm PS. Timing lights 25/26/21. Good set-up and focus. Lots of water and fog, and print is dark. Vent arm is visible – but little detail is available.

Trackers:

E-205. Shiloh – 35mm PS. Good focus and exposure. Timing lights 17/21/16. Track is somewhat erratic at booster separation, but vehicle stays in frame. Digital timing is questionable – time display prior to launch. On STS-112, timing on this item was very erratic.

E-213. MOTS at UCS 12 – 35mm PS. Camera start switch would not activate camera. No run.

E220. Tracker at UCS-8 – 35mm PS. Good set-up, and focus. This is the first time UCS-8 was used. Prior 39A launches had this item at U247L116. This is a much better site. Timing lights 37/37/22. Good track. Some camera shake noted.

E-222. South Beach Tracker – 35mm PS. Good set-up. Focus seemed slightly soft. Timing lights 42/41/24. Excellent track. Timing lights on print very dim. Print good.

E-223. Tracker at UCS 9 – 35mm PS. Good set-up, focus and track. Timing lights 27/26/12. Print good.

E-224. Tracker at UCS 16 – 35mm PS. Good set-up and track. Focus seemed slightly soft. Timing lights 37/35/20.

Metrics:

E-204. PIGOR. 35mm Mitchell. Good track. Looks slightly soft. Printing lights 16/20/15.

E-207. PL DOAMS. 35mm PS. Good focus, track and exposure. Timing lights 34/33/12. Print generally good, but about half way into track print gets very dark.

E-208. CB DOAMS. In spite of recent efforts to perform knife edge focus on this camera, focus still seems somewhat soft. Data not very unusable. Printing lights 22/20/06 which indicated film was over exposed. Print acceptable.

E-212. ATOTS at UCS 23 – 35mm Mitchell. Focus seemed soft. Exposure acceptable. Very poor track – unusable. Timing lights 26/25/09. Good print. This item is the best candidate for 35 mm Photo-Sonics camera change out. This would provide digital timing.

PH-M1

January 31, 2003

TO: Distribution

FROM: PH-M1/Shuttle Test Director

SUBJECT: STS-107 Launch Countdown - Post Test Debriefing

Columbia lifted off from Pad A with the Spacehab Research Double Module on January 16, 2003, at 10:39 a.m. on its first launch attempt. During the 16-day science mission, Astronauts performed a variety of science designed to study Astronaut health and safety, technology development and Earth and Space Sciences. The KSC team did an outstanding job managing the challenges and manifest delays encountered throughout the processing flow as well as planning and executing the launch countdown activities. This was a particularly challenging launch countdown that included an MVAK late stow, EDO Pallet servicing, significant middeck experiments and heightened security.

All personnel associated with the processing of the Orbiter vehicle, RDM, ground systems, payloads and experiments should be proud of the work accomplished that helped to make this mission a success. The launch countdown post-test debriefing was conducted on Tuesday, January 28, 2003. Several minor enhancements were identified and two issues were assigned as formal actions and are summarized below:

- **S0007-107-1: Tours Outside Pad Gate** – Review procedures and implement corrective action to ensure tours outside the pad gate do not interfere with pad operations. Identify viewing location and tour sequencing requirements to minimize potential for operational impacts. Actionee: C. Boggs/SGS-323, D. Frostrom/XA-F. Due: STS-114 S0007 Pretest Briefing.
- **S0007-107-2: Optical Tracking Film Quality** – Review Playalinda and Cocoa Beach DOAMs camera setup protocol to ensure procedures are in place to provide required shuttle tracking and video during launch/ascent. Also, review Cocoa Beach DOAMs equipment and provide enhancements as needed to ensure high quality film tracking available for post-flight review. Actionees: M. Gawel/Eastern Range, R. Robinson/Johnson Controls. Due: STS-114 S0007 pretest briefing.

The above actions will be tracked through closure. All actionees should respond with action closures in writing to the undersigned not later than 2 days prior to the suspense date.

Original signed by
Jeffrey Spaulding

Distribution:

PH-F/PH-G/PH-H/PH-J/PH-K
PH-M1/PH-M2/PH-M3/All Personnel
PH-P1/T. Willingham
PH-P1/M. Glenn
PH-P2/G. Schumann
PH-P4-B/ A. Willett/D. Wyatt
TA-B2/All Personnel
UB-B2/J. Hall
UB-C1/R. Parks
UB-E1/M. Generale/J. Mathis
UB-E2/J. Keifenheim
XA-E1/B. Johnson
XA-F/D. Frostrom
GSFC/MILA-KSC/M. Blizzard, T. Ippolito
JSC/CA-4/R. Hanley
JSC/CB/D. Hurley
45 RANS/DOOA/Lt. M. Thomas
45 RANS/DOUF/M. Gawel
45 LG/LGPRS/L. Padilla
Boeing/721S-S230/J. Graves
Spacehab/M. McClellan, J. Tuttle

Space Gateway Support

SGS-323/C. Boggs
SGS-347/B. White
SGS-347/K. Alderman/D. Wallace
SGS-349/C. Norman

United Space Alliance

USK-014/M. Orr
USK-035/M. Hogan
USK-124/J. Pape
USK-167/R. Rook
USK-167/W. Kidd
USK-170/D. Lombardo
USK-170/P. Arnold
USK-170/C. Meinert
USK-172/D. Sutherland
USK-172/S. Leonhard
USK-173/P. Klonowski
USK-187/P. Stieler
USK-196/R. Duncan
USK-198/P. Brinko
USK-214/L. Hornbeck
USK-217/B. Potteiger
USK-217/M. Paxton
USK-217/J. Taylor
USK-217/R. Knispel
USK-220/J. Noble
USK-225/P. Wagner
USK-225/W. Batungbacal

USK-229/R. Gillette
USK-229/J. Vevera
USK-247/M. Hunter
USK-247/J. Coyne
USK-284/G. Thomas
USK-284/B. Kennedy
USK-284/M. Page/J. Hensley
USK-286/C. Hardin
USK-290/B. McCain/D. Woodside
USK-291/D. Clarkson/J. Barnette
USK-291/J. Hankins
USK-291/R. Harvey
USK-291/L. Waters/M. Thielen
USK-295/J. Rooker
USK-298/P. Gratsch
USK-299/R. Merritt
USK-299/G. Odom, T. Smolinski
USK-314/B. Stover
USK-315/M. Wine
USK-345/J. Hlavacka
USK-377/A. Garrett
USK-381/L. Messemer
USK-399/D. Thompson
USK-420/ J. Sterritt
USK-420/E. Hall
USK-420/T. Wells
USK-426/M. Key
USK-443/L. Nielsen
USK-455/J. Kowaleski
USK-459/M. Young
USK-550/T. Helms/M. Gaetjens/K. Regula
USK-580/ R. Scott
USK-607/B. Orr/G. Best/D. Hartung
USK-647/D. Simmons
USK-669/P. Hart (Patricia R.)
USK-683/K. Poff
USK-T21/W. Yates
cc:
PH/M. Wetmore
PH/M. Leinbach
PH-A/C. Abner
PH-A2/E. Mango/J. Guidi
PH-M/C. Nagel
USAlliance/ USK-019/P. Stratton
USK-025/L. Ostarly
USK-229/J. Hazelton
USK-274/R. Osborne
USK-321/B. Herman
USK-383/M. Nappi
USK-417/D. Nash

TEST: STS-107 LAUNCH
DATE: 1/16/03
OPS NO.: F1120

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
41791	D32	WHITE ROOM	35MM FILM	(6) TO KSC 03PD-0144 03PD-0145 03PD-0146 03PD-0147 03PD-0148 03PD-0149	NO IMAGES OF MISSION COMMANDER RICK HUSBAND TAKEN
41792	D34	RSS-210' LEVEL	35MM FILM	NONE	NO GOOD - OUT OF FOCUS - NEED THIS VIEW
41793	D36	FSS-260' 25C	35MM FILM	(1) TO KSC 03PP-0142	GOOD
41799	D56	39-2 12	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41800	D57	39-3 12	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED - FILM CRINKLED ON EDGES IN SLEEVES
41801	D58	39-4 01A	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41802	D60	39-3 13	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41803	D67	39-2 TKR	35MM FILM	NONE	IMAGE SIZE TOO SMALL
41805	D75	OUTLYING FIXED	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED - FILM CRINKLED ON EDGES IN SLEEVES
41806	D76	OUTLYING FIXED	35MM FILM	NONE	SMOKE
41807	D77	OUTLYING FIXED	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED-FILM SHOULD BE ON SPOOL NOT HANDLED LIKE THIS
41808	D78	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0140 (1) TO JSC (1) TO HQ (1) TO MSFC	SELECTIONS MADE AFTER SMOKE

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
41809	D79	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0141 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD
41810	D80	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0139 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD
41811	D87	OUTLYING FIXED	120MM FILM	(1) TO KSC 03PP-0143 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD - FILM CRINKLED ON EDGES IN SLEEVE
41813	D90	VAB ROOF	DIGITAL	(2) TO KSC 03PD-0128 03PD-0129	
41858	D1	?	DIGITAL	(1) TO KSC 03PD-0130	
41858	D2	?	DIGITAL	(1) TO KSC 03PD-0130	BOTH ITEMS D1 AND D2 WERE PRESENTED ON SAME WORK ORDER
41860	D3	?	DIGITAL	(1) TO KSC 02PD-0131	

TEST: STS-107 LAUNCH
DATE: 1/16/03
OPS NO.: F1120

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
41791	D32	WHITE ROOM	35MM FILM	(6) TO KSC 03PD-0144 03PD-0145 03PD-0146 03PD-0147 03PD-0148 03PD-0149	NO IMAGES OF MISSION COMMANDER RICK HUSBAND TAKEN
41792	D34	RSS-210' LEVEL	35MM FILM	NONE	NO GOOD - OUT OF FOCUS - NEED THIS VIEW
41793	D36	FSS-260' 25C	35MM FILM	(1) TO KSC 03PP-0142	GOOD
41799	D56	39-2 12	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41800	D57	39-3 12	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED - FILM CRINKLED ON EDGES IN SLEEVES
41801	D58	39-4 01A	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41802	D60	39-3 13	70MM FILM	NONE	SIMILAR DIGITAL ITEM USED
41803	D67	39-2 TKR	35MM FILM	NONE	IMAGE SIZE TOO SMALL
41805	D75	OUTLYING FIXED	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED - FILM CRINKLED ON EDGES IN SLEEVES
41806	D76	OUTLYING FIXED	35MM FILM	NONE	SMOKE
41807	D77	OUTLYING FIXED	120MM FILM	NONE	SIMILAR DIGITAL ITEM USED-FILM SHOULD BE ON SPOOL NOT HANDLED LIKE THIS
41808	D78	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0140 (1) TO JSC (1) TO HQ (1) TO MSFC	SELECTIONS MADE AFTER SMOKE

WORK ORDER	ITEM NUMBER	LOCATION	MEDIA	SELECTION/ NUMBER	COMMENTS
41809	D79	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0141 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD
41810	D80	OUTLYING FIXED	35MM FILM	(1) TO KSC 03PP-0139 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD
41811	D87	OUTLYING FIXED	120MM FILM	(1) TO KSC 03PP-0143 (1) TO JSC (1) TO HQ (1) TO MSFC	GOOD - FILM CRINKLED ON EDGES IN SLEEVE
41813	D90	VAB ROOF	DIGITAL	(2) TO KSC 03PD-0128 03PD-0129	
41858	D1	?	DIGITAL	(1) TO KSC 03PD-0130	
41858	D2	?	DIGITAL	(1) TO KSC 03PD-0130	BOTH ITEMS D1 AND D2 WERE PRESENTED ON SAMED WORK ORDER
41860	D3	?	DIGITAL	(1) TO KSC 02PD-0131	

Brown-3, Charles T

From: Bill Bender [Bill.Bender@vitc.patrick.af.mil]
Sent: Thursday, February 20, 2003 2:27 PM
To: 'Brown-3, Charles T'
Cc: Bud Wellman; Carol Bertram
Subject: EOM STATUS

NO attachments!

Chuck,

The EOM status is as follows:

STS-92 EOM 10/11/2000 Edwards landing
STS-98 EOM 02/02/2001 Edwards landing
STS-100 EOM 05/01/2001 Edwards landing
STS-111 EOM 06/19/2002 Dryden landing

Attached is STS-108 12/17/2001

<<EOM STS-108.doc>> <<EOM108 matrix+2.doc>>

Regarding Customer Complaint Logs, the log are available for your review in Building 1605 at your convenience.

If you have any additional questions, please let me know.

Regards,

Bill
William Bender
Operations Manager
Johnson Controls, VITC
phone: (321) 853-2108
pager: (321) 638-9335
fax: (321) 853-5483
bill.bender@aerospaceimaging.com

02/20/2003

Brown-3, Charles T

From: Bill Bender [Bill.Bender@vitc.patrick.af.mil]
Sent: Thursday, February 20, 2003 2:27 PM
To: 'Brown-3, Charles T'
Cc: Bud Wellman; Carol Bertram
Subject: EOM STATUS

Chuck,

The EOM status is as follows:

STS-92 EOM 10/11/2000 Edwards landing
STS-98 EOM 02/02/2001 Edwards landing
STS-100 EOM 05/01/2001 Edwards landing
STS-111 EOM 06/19/2002 Dryden landing

Attached is STS-108 12/17/2001

<<EOM STS-108.doc>> <<EOM108 matrix+2.doc>>

Regarding Customer Complaint Logs, the log are available for your review in Building 1605 at your convenience.

If you have any additional questions, please let me know.

Regards,

Bill
William Bender
Operations Manager
Johnson Controls, VITC
phone: (321) 853-2108
pager: (321) 638-9335
fax: (321) 853-5483
bill.bender@aerospaceimaging.com

02/20/2003

WORK SURVEY

Visual Information and Technical Contract (VITC)

Please critique the service you received from the Johnson Controls (JCI) VITC Contractor or Subcontractor

1. YOUR WORK REQUEST: (Work Order Number) 39922

A. METHOD PROCESSED:

Through Cape Support	_____	By Mail/Fax	_____
Through JCI Service Desk	_____	By Phone	_____
Through JCI Subcontractor	_____		

B. PROCESSED:

	YES	NO	N/A
Courteously	_____	_____	_____
Clerk assisted in defining requirements	_____	_____	_____
Clerk answered all questions	_____	_____	_____

2. YOUR PHOTOGRAPHER:

	YES	NO	COMMENTS
Contacted you prior to appointment	_____	_____	_____
On time for appointment	_____	_____	_____
Knowledgeable of your needs	_____	_____	_____
Courteous and professional demeanor	_____	_____	_____

3. YOUR PRODUCT:

A. TYPE:		B. QUALITY:	
Still Photo	<u>digital</u> ✓	Superior	_____
Motion Picture	_____	Excellent	_____
Video	_____	Adequate	_____
Studio	_____	Inferior	✓
COMMENTS			

C. TIMELINESS:

	YES	NO	COMMENTS
Delivered on the date promised	_____	_____	_____
If late, were you notified prior to due date	_____	_____	_____

4. OVERALL COMMENTS/SUGGESTIONS:

There were several exposures taken on the 195' level of PA039B during the STS-112 TCDT that were out of focus.

THORNSLEY, K.K.
CUSTOMER NAME

K.K. Thornsley
CUSTOMER SIGNATURE

09/23/02
DATE

Send to JCI-VITC-1 (call 853- 7071 if you have questions)

Please fold, staple and return by mail (address is on the reverse side).

JOHNSON CONTROLS

WORK SURVEY

Visual Information and Technical Contract (VITC),

Please critique the service you received from the Johnson Controls (JCI) VITC Contractor or Subcontractor

1. YOUR WORK REQUEST: (Work Order Number) ITEM 039

A. METHOD PROCESSED:

Through Cape Support	_____	By Mail/Fax	_____
Through JCI Service Desk	_____	By Phone	_____
Through JCI Subcontractor	_____		

B. PROCESSED:

	YES	NO	N/A
Courteously	_____	_____	_____
Clerk assisted in defining requirements	_____	_____	_____
Clerk answered all questions	_____	_____	_____

2. YOUR PHOTOGRAPHER:

	YES	NO	COMMENTS
Contacted you prior to appointment	_____	_____	_____
On time for appointment	_____	_____	_____
Knowledgeable of your needs	_____	_____	_____
Courteous and professional demeanor	_____	_____	_____

3. YOUR PRODUCT:

A. TYPE:		B. QUALITY:	
Still Photo	_____	Superior	_____
Motion Picture	_____	Excellent	_____
Video	_____	Adequate	_____
Studio	_____	Inferior	_____
COMMENTS			

C. TIMELINESS:

	YES	NO	COMMENTS
Delivered on the date promised	_____	_____	_____
If late, were you notified prior to due date	_____	_____	_____

4. OVERALL COMMENTS/SUGGESTIONS: THIS ITEM NOT DELIVERED
DID NOT RUN

AVASA XP-ET Media Services Ken Thomaleu 02/13/03
 CUSTOMER NAME CUSTOMER SIGNATURE DATE

Send to JCI-VITC-1 (call 853- 7071 if you have questions)

Please fold, staple and return by mail (address is on the reverse side).



WORK SURVEY

Visual Information and Technical Contract (VITC)

Please critique the service you received from the Johnson Controls (JCI) VITC Contractor or Subcontractor

1. YOUR WORK REQUEST: (Work Order Number) ITEM 039

A. METHOD PROCESSED:

Through Cape Support	_____	By Mail/Fax	_____
Through JCI Service Desk	_____	By Phone	_____
Through JCI Subcontractor	_____		

B. PROCESSED:

	YES	NO	N/A
Courteously	_____	_____	_____
Clerk assisted in defining requirements	_____	_____	_____
Clerk answered all questions	_____	_____	_____

2. YOUR PHOTOGRAPHER:

	YES	NO	COMMENTS
Contacted you prior to appointment	_____	_____	_____
On time for appointment	_____	_____	_____
Knowledgeable of your needs	_____	_____	_____
Courteous and professional demeanor	_____	_____	_____

3. YOUR PRODUCT:

A. TYPE:	B. QUALITY:
Still Photo _____	Superior _____
Motion Picture _____	Excellent _____
Video _____	Adequate _____
Studio _____	Inferior _____
<u>COMMENTS</u>	

C. TIMELINESS:

	YES	NO	COMMENTS
Delivered on the date promised	_____	_____	_____
If late, were you notified prior to due date	_____	_____	_____

4. OVERALL COMMENTS/SUGGESTIONS:

*THIS item NOT delivered
DID NOT RUN*

AVASA XA-EI Media Services
CUSTOMER NAME

Ken Thomaleu
CUSTOMER SIGNATURE

02/13/03
DATE

Send to JCI-VITC-1 (call 853- 7071 if you have questions)

Please fold, staple and return by mail (address is on the reverse side).

Brown-3, Charles T

From: Bill Bender [Bill.Bender@vitc.patrick.af.mil]
Sent: Thursday, February 20, 2003 3:58 PM
To: 'Brown-3, Charles T'
Cc: Bud Wellman; Carol Bertram
Subject: CUSTOMER SURVEY INFORMATION

Chuck,

The FY 2001 and FY 2002 Work Survey Review Logs reveal that we have received the following comments from Ken Thornsley:

- 09/23/02 Suggestion for camera operation
- 09/23/02 Suggestion for camera focus and exposure
- 09/23/02 Suggestion for camera focus and exposure for TCDT

There is no input from Mr. Thornsley for FY 2001.

If I can provide any additional information please let me know.

Bill,

Bill

William Bender
Operations Manager
Johnson Controls, VITC
phone: (321) 853-2108
pager: (321) 638-9335
fax: (321) 853-5483
bill.bender@aerospaceimaging.com

02/20/2003

Brown-3, Charles T

From: Bill Bender [Bill.Bender@vitc.patrick.af.mil]
Date: Thursday, February 20, 2003 3:58 PM
To: 'Brown-3, Charles T'
Cc: Bud Wellman; Carol Bertram
Subject: CUSTOMER SURVEY INFORMATION

Chuck,

The FY 2001 and FY 2002 Work Survey Review Logs reveal that we have received the following comments from Ken Thornsley:

- 09/23/02 Suggestion for camera operation
- 09/23/02 Suggestion for camera focus and exposure
- 09/23/02 Suggestion for camera focus and exposure for TCDT

There is no input from Mr. Thornsley for FY 2001.

If I can provide any additional information please let me know.

Bill,

Bill

William Bender
Operations Manager
Johnson Controls, VITC
phone: (321) 853-2108
pager: (321) 638-9335
fax: (321) 853-5483
bill.bender@aerospaceimaging.com

02/20/2003

Brown-3, Charles T

From: Thornsley-1, Ken
Sent: Thursday, June 20, 2002 12:54 PM
To: Brown-3, Charles T
Subject: FW: WEEKEND OVERTIME

From: Thornsley-1, Ken
Sent: Thursday, June 20, 2002 12:43 PM
To: 'Bill Bender'
Subject: RE: WEEKEND OVERTIME

Hello:

I have talked to George and Glenn. Glenn would like to be off Saturday and Sunday. We will need Kim or a HDTV camera person to take Glenn's place for the CEIT. This would have George off Sunday and Monday, with Glenn here on Monday. There would need to be a still person at the Press Site to fill in for George on Monday. I will also have to schedule the fairing installation at Delta Pad17a, for Contour with Johnson Control. This starts at 7:30 AM. We will need good clean shots of the spacecraft and the complete installation of the fairing until it is closed.

Thank you,
Ken K. Thornsley

From: Bill Bender[SMTP:Bill.Bender@vitc.patrick.af.mil]
Sent: Thursday, June 20, 2002 9:55 AM
To: 'Brown-3, Charles T'; 'Johnson-5, William'; 'Thornsley-1, Ken'
Cc: Robbie Robinson; Rick Wetherington
Subject: WEEKEND OVERTIME

Chuck,

I have been informed by George and Glenn that there is an overtime requirement for Saturday June 22, 2002. The nature of coverage is still and video at CEIT for Astronaut activity. The start time is 7:30 AM and estimated for 8 hours.

An alternative is to shift George and Glenn for a full 8 hours on Saturday with Sunday and Monday as the scheduled two consecutive days off. Monday is the STS-112 rollover. This event could be covered by VITC Cape side.

Please advise.

Regards,

Bill

Bill Bender
Operations Manager
Johnson Controls, VITC
Tel: (321) 853-2108
Pager:(321) 638-9335
Fax:(321) 853-5483
Bill.Bender@aerospaceimaging.com

Brown-3, Charles T

From: Thornsley-1, Ken
Sent: Thursday, June 13, 2002 4:22 PM
To: Brown-3, Charles T
Cc: Johnson-5, William
Subject: Saturday requirement

Glenn and George will need to cover the STS-112 Payload CEIT on 15 June 2002. There are two International astronaut on this crew. They will need to be recorded for use by the media and the International Press. This would start at 7:30 AM and should be completed by 3:30 PM.

The other item that I was concerned with is that they will have to return on Monday for the STS-111. They will not have two days off. I have been through this before as I had the same problem last weekend with the STS-107 CEIT.

Payload door closure for flight is 2nd shift Friday. I am trying to schedule USA to do video and Johnson Control to do the stills.

On Monday, landing day, Contour will be mated to the upper stage in SAEF2. I will have to schedule this with Johnson Control as USA can not support because of landing.

I have called Johnson Control and asked to talk to Bill Bender. I was told that he would call me back when he was out of the meeting. It is 4:15 PM and I have not received a call back. I will have to schedule these on Friday.

I have a schedule for next weekend and it is much worse than this one. I will try to let you know what we are doing. The schedule is getting very heavy.

Thank you,
Ken K. Thomsley

Brown-3, Charles T

From: Oliu-1, Armando [Armando.Oliu-1@nasa.gov]
Sent: Tuesday, January 21, 2003 4:23 PM
To: Robinson, Robbie #VITC; Abell, Chas; Alex, Gus; Bernie Harland; Bill Bender; Brown, Charles; Bud Wellman; CLOUDT, CHRIS R. (JSC-SN) (HEI); David Brand; Martin David P GM-13 45RMS/RMSF; DISLER, JONATHAN M.; George Jackson; Jill L. Giles; Jim Cain; John Kechele; Kenny Allen; Michael Stone; Mills, Bob; Newland, Glenn; Oliu, Armando; Page, Robert; Rick Wetherington; Rieckhoff, Tom; Rivera, Jorge; Rampley Roger B GS-12 45RMS/RMSF; Sandy Van Hooser; Sharon Dunn; Speece, Robert; Tim Terry; Tom Joseph; Wolfe-1, Richard; Wright, Robert
Subject: RE: Film Critique for STS-107 Launch Engineering Films

I will add a bit to this.

Robbie breaks it down to individual camera, but I think things are lost within all that data. On this mission the External Tank lost a significant piece of foam at about 81 seconds after T-0. The debris struck the underside of the left-hand wing of the orbiter. A clear shower of particles can be seen on a couple of films as the debris broke apart. Unfortunately, the one film item that would have given the best data for this (E-208) was out of focus and unusable. As one can imagine we were quite disappointed. The extent of damage on the orbiter is unknown at this point due to poor resolution of film data. I am not sure if E-208 would have given us the information we desire, but we certainly will not know now.

As you know from the past, the films are usually nick-picked to death. Everything from focus, to exposure, to field-of-view is carefully scrutinized every flight. This is done of course because we simply don't have the number of cameras available to afford any problems. The loss of one camera can be, and, is significant. This mission proved that, and then some. Not only did we not have usable data from E-208, but the film from the best camera we have, E-207, was unusable. This is simply unacceptable from an engineering perspective.

I am sure this is coming as an official action from the Launch Director, but for now I will mention it; we need to figure out what happened and why, and then prevent this from happening again. If equipment is getting old, then we need to replace it. If man-power is getting slim, then that needs to be brought forward. If the experience of the workers is a problem, then that needs to come forward. Whatever the problem, it needs to be fixed. We cannot continue to play this roulette with the film data.

Armando Oliu
NASA Ice/Debris Team
Kennedy Space Center
321-861-3644

-----Original Message-----

From: Robbie Robinson [mailto:Robbie.Robinson@vitc.patrick.af.mil]
Sent: Tuesday, January 21, 2003 11:37 AM
To: Abell, Chas; Alex, Gus; Bernie Harland; Bill Bender; Brown, Charles; Bud Wellman; CLOUDT, CHRIS R. (JSC-SN) (HEI); David Brand; David Martin; DISLER, JONATHAN M.; George Jackson; Jill L. Giles; Jim John Kechele; Kenny Allen; Michael Stone; Mills, Bob; Newland, Glenn; Oliu, Armando; Page, Robert; Rick Wetherington; Rieckhoff, Tom; Rivera, Jorge; Roger Rampley; Sandy Van Hooser; Sharon Dunn; Speece, Robert; Tim Terry; Tom Joseph; Wolfe-1, Richard; Wright, Robert
Subject: Film Critique for STS-107 Launch Engineering Films

Attached is the Film Critique for STS-107 Launch Engineering Films:

<<Film ReviewSTS1071ch.doc>>

Robbie Robinson
Photo Planner, Shuttle
Johnson Controls - VITC, 321 853-5387

01/22/2003

STS-107 T + 5 Hour Playback

At approximately 0900 EST on January 16, 2003 Gene Cartee, OTV Lead, received a call from Robbie Robinson of Johnson Controls informing him that the T + 5 hour playback tapes would be delivered in M-II format. Mr. Cartee informed Bill Hillier who in-turn called Mr. Robinson and requested that Johnson Controls deliver tapes to JYVR in another format as was agreed in meetings following problems with the STS-113 T + 5 hour playback in November 2002. Mr. Robinson replied that he would deliver a composite playback tape in S-VHS format.

At 1520 EST JSC called and asked if JYVR would be ready to perform the playback at the scheduled time of 1530 EST. JYVO informed JSC that the playback tape had not been delivered yet and consequently the playback would not be able to start on time. Billie Bryant OTV Lead, immediately called Johnson Controls. He was told that the composite was not ready and there was no estimate as to when it would be delivered. JYVO informed JSC.

At 1630 EST Johnson Controls informed JYVO that the tape should be delivered in about an hour.

The composite playback S-VHS tape was delivered to the LCC, 1P2 at 1745 EST. JYVR informed JSC. JSC said that JYVR would have to wait until after the NASA Video File was completed to acquire the satellite.

At 1850 EST, JYVR acquired the satellite and started playback. All stations reported no IRIG and playback was stopped. A mismatch was found in-house and corrected. Playback was started again at 1900 EST. At 1910 EST Goddard reported that they had lost IRIG. Marshall also reported losing IRIG. JSC was still receiving good IRIG levels and requested that JYVR continue playback. All stations agreed and playback continued.

The playback was completed at 1930 EST. JSC reported good received playback. Marshall began to troubleshoot in-house. The problem for Marshall and Goddard was found at Marshall and corrected.

The playback was started for the final time at 1955 EST and completed at 2025 EST. Marshall and Goddard reported good received playback and JYVR was relieved from support.

JOHNSON CONTROLS

WORK SURVEY

Visual Information and Technical Contract (VITC),

Please critique the service you received from the Johnson Controls (JCI) VITC Contractor or Subcontractor

STS-107 LAUNCH FILM

1. YOUR WORK REQUEST: (Work Order Number)

ITEM 039

A. METHOD PROCESSED:

Through Cape Support	_____	By Mail/Fax	_____
Through JCI Service Desk	_____	By Phone	_____
Through JCI Subcontractor	_____		

B. PROCESSED:

	<u>YES</u>	<u>NO</u>	<u>N/A</u>
Courteously	_____	_____	_____
Clerk assisted in defining requirements	_____	_____	_____
Clerk answered all questions	_____	_____	_____

2. YOUR PHOTOGRAPHER:

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Contacted you prior to appointment	_____	_____	_____
On time for appointment	_____	_____	_____
Knowledgeable of your needs	_____	_____	_____
Courteous and professional demeanor	_____	_____	_____

3. YOUR PRODUCT:

A. TYPE:

Still Photo _____
 Motion Picture _____
 Video _____
 Studio _____

B. QUALITY:

Superior _____
 Excellent _____
 Adequate _____
 Inferior _____

COMMENTS

not good

C. TIMELINESS:

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Delivered on the date promised	_____	_____	_____
If late, were you notified prior to due date	_____	_____	_____

4. OVERALL COMMENTS/SUGGESTIONS:

DID NOT RUN

This item not delivered

AVASA XA-EI Media Services

CUSTOMER NAME

Ken Thomsley

CUSTOMER SIGNATURE

02/13/03

DATE

Send to JCI-VITC-1 (call 853- 7071 if you have questions)

Please fold, staple and return by mail (address is on the reverse side).

JOHNSON CONTROLS

WORK SURVEY

Visual Information and Technical Contract (VITC),

Please critique the service you received from the Johnson Controls (JCI) VITC
Contractor or Subcontractor

STS-107 Launch Film

1. YOUR WORK REQUEST: (Work Order Number) 41803 D 67 ITEM #

A. METHOD PROCESSED:

Through Cape Support	_____	By Mail/Fax	_____
Through JCI Service Desk	_____	By Phone	_____
Through JCI Subcontractor	_____		

B. PROCESSED:

	YES	NO	N/A
Courteously	_____	_____	_____
Clerk assisted in defining requirements	_____	_____	_____
Clerk answered all questions	_____	_____	_____

2. YOUR PHOTOGRAPHER:

	YES	NO	COMMENTS
Contacted you prior to appointment	_____	_____	_____
On time for appointment	_____	_____	_____
Knowledgeable of your needs	_____	_____	_____
Courteous and professional demeanor	_____	_____	_____

3. YOUR PRODUCT:

A. TYPE:	B. QUALITY:
Still Photo _____	Superior _____
Motion Picture _____	Excellent _____
Video _____	Adequate _____
Studio _____	Inferior _____
COMMENTS _____	<i>not good</i>

C. TIMELINESS:

	YES	NO	COMMENTS
Delivered on the date promised	_____	_____	_____
If late, were you notified prior to due date	_____	_____	_____

4. OVERALL COMMENTS/SUGGESTIONS:

*THIS ITEM IS A TRACKER
and appears to have been changed from a 300 mm
lens to a 30 mm lens noticable to use, THIS ITEM
IS ALWAYS the 1ST ONE requested image very small*

NASA-KA-ET Media Services Ken Thornley 02/13/03
CUSTOMER NAME CUSTOMER SIGNATURE DATE

Send to JCI-VITC-1 (call 853- 7071 if you have questions)

Please fold, staple and return by mail (address is on the reverse side).